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ABSTRACT

A study of the relationship between university-level second language development and previous language and other experience is described. The study, in its early stages at the time of writing, is being conducted at Trinity College in Dublin, Ireland, and involves students of French, German, Italian, and Spanish. This report describes the subjects and methodology, specific research questions addressed, research instruments and methods, computerization of the database, and some preliminary findings from small-scale studies. Early results concern the relationship between second language experience and second language proficiency, the development of second language lexicon, and the interaction between languages learned (interlanguage) and between language learning experiences. A 28-item bibliography is appended. (MSE)

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TRINITY COLLEGE DUBLIN

Centre for Language and Communication Studies

The TCD Modern Languages Research Project

Objectives, instruments and preliminary results

David Singleton

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Autumn 1990

The TCD Modern Languages Research Project: objectives, instruments and preliminary results*

by

David Singleton

1 INTRODUCTORY

This paper provides an account of the early stages of what is intended to become a major long-term research project on university-level second language (L_2) learning. The project in question was initiated at Trinity College Dublin (TCD) in October 1988 and has come to be be labelled the TCD Modern Languages Research Project. It is co-ordinated from the Centre for Language and Communication Studies, but also involves the TCD Departments of French, Germanic Studies, Italian, and Spanish. Its general aim is to monitor the L_2 development of university-level learners on a continuous basis and to examine the possibility of connections between these learners' L_2 development and their previous educational and language learning experience.

The precise modalities of the project are still being worked out, in terms both of the categories of data to be collected and of the instruments to be used in the elicitation of such data. Furthermore, the data-base which will be used to store and process the

* An earlier version of this paper was presented at the Åbo Academi, Åbo, Finland, on November 14, 1990 at the invitation of the English Department of that institution. I should like to thank Professor Håkan Ringbom and his colleagues in the English Department of the Åbo Academi for their generous hospitality on that occasion and for the helpful feedback they provided on various aspects of the research project here described.

different types of data is still in the process of being set up and tested. However, enough has been learned during the pilot phase of the project for a detailed progress report and prospectus on the project to be appropriate at this point. The first part of this paper attempts just such an overview of the current state and likely future directions of the project.

Although the project is only now entering its first year of full operation, the data it has generated during its pilot phase have already provided material for a number of dissertations and research papers, some of which will be published in the near future. The second part of the present paper constitutes essentially a summary of the main findings which emerge from these early, small-scale explorations of the project data.

2 SUBJECTS AND METHODOLOGY

The subjects involved in the project are drawn from the TCD Departments of French, Germanic Studies, Italian, and Spanish. They are all full-time students enrolled on undergraduate degree courses offered by those departments. Most are in their late teens or early twenties, but a handful in every year are rather older "mature students". All students in the French Department have to have studied French previously - usually at school, but the remaining three departments also admit "*ab initio*" students, and in the case of the Italian Department these constitute the large majority of its undergraduate population. In line with the recent trend in other institutions in Ireland and elsewhere, the majority of undergraduates specializing in languages at TCD are female, and this trend is clearly reflected in the composition of the samples of students with which we have so far had contact in the project.

The general aim of the project has already been referred to. It is to investigate the L_2 development of our subjects and to explore any correspondences that may be discernible between such development and relevant previous experience. Particular issues that

we are interested in attempting to illuminate in this research include:

(i) the effects of an early beginning to a learner's L_2 experience and of specific types of exposure to the L_2 on his/her later level of proficiency in the language in question;

(ii) L_2 lexical development and processing in older and advanced students, and the relationship between L_2 lexical competence and other L_2 competencies;

(iii) the consequences of accumulating languages in terms of the cross-linguistic influence which may affect the reception, production and acquisition of the languages in question and in terms of more general effects on attitudes, motivation and learning/studying strategies.

In order to address such issues, the collection of four broad categories of data is envisaged. These are:

(i) background information about our subjects with particular reference to their educational and language learning experience and achievements prior to entering university;

(ii) information about the performance of our subjects in university language examinations as they progress through their degree courses;

(iii) samples of the L_2 performance of our subjects at various stages of their undergraduate careers;

(iv) introspective data relative to our subjects' L_2 performance.

To date instruments relative to the gathering of background information and the elicitation of actual L_2 data have been piloted; data under heading (ii), that is, language examination results, will be supplied on the basis of the testing instruments customarily used by the respective departments; instruments for eliciting introspective data will be based on an approach used some years ago in an experiment conducted by two of the researchers involved in the project (see Singleton & Little 1984).

With regard to background information, a questionnaire to elicit this was designed in the first pilot year of the project and was administered to all first-year undergraduate students in the four language departments involved in both 1988-89 and 1989-90. Some details of both the form and the content of the questionnaire have since been modified in the light of (a) difficulties that subjects had interpreting particular questions, (b) coding problems presented by the inclusion of very open questions, and (c) the need we saw to ensure as close as possible a correspondence between the organization and appearance of the questionnaire and that of the data-base forms into which subjects' responses would be entered. The questionnaire seeks a wide range of information about formal educational, extra-curricular and work experience as well as information about language-learning and language-using experience.

As far as the forms of the language examinations set by the various language departments are concerned, a full description of these would take us too far afield in the present context. Suffice it to say that these examinations are eclectic mixtures whose components vary from department to department and include traditional test-types such as translation-tasks and essays alongside more "modern" procedures such as cloze-tests and discrete-point grammar-tests. Because of the variety of test-types and combinations of test-types employed and because the examination process is outside the control of the Modern Languages Research Project, there is no possibility of using examination results as a reliable basis for comparing particular aspects of learner progress across the whole sample. These results can be used only as very broad indications as to the level of learner proficiency, and even as such will need to be treated on a department-by-department basis.

To turn now to our own elicitation of data indicative of the state of learners' L_2 competence, the instrument we used during the pilot phase of the project was the C-test. This is a reduced-redundancy procedure originally developed in Germany. It is very fully described in a special issue of *Fremdsprache und Hochschule*

(No. 13/14), the first three articles of which (Klein-Braley 1985, Raatz 1985, Raatz & Klein-Braley 1985) provide a particularly accessible introduction to the rationale, design and operation of the test. Essentially, the C-test sets the task of restoring to completeness a short written text, every second word of which has had its second half deleted. To refine this account a little, the first sentence of the text is in fact left intact to provide a contextualizing lead-in; one-letter words are ignored (except elided forms such as French *l'*, *d'*, etc., which are counted as belonging to the words to which they are attached); and where a word has an odd number of letters, one more letter is removed than is left standing. In the version of the C-test procedure we used in the pilot phase of the project we introduced the further principle that all proper nouns apart from very frequently occurring forenames and placenames should also be ignored for counting and deleting purposes.

Where C-tests have been used to evaluate general levels of L_2 proficiency they have been deployed in batteries of six in order to ensure reliability. However, in our case, we were bound by tight institutional constraints which allowed only a very limited amount of class time to be "borrowed" for the data-gathering operation, and so we had to be content with the administration of just one C-test on each testing occasion. We would argue, though, that, since our aim was to elicit and explore rather than to assess and grade, the notion of reliability, as normally understood by language testers, was not especially relevant to our purposes.

It is appropriate to give some consideration to the appropriateness of using the C-test as a means of investigating L_2 acquisition and processing. The procedure in question is experimental in essence, and experimental methods of gathering evidence about language processing and development (see, e.g., Ellis & Beattie 1986: 228f.) have not been without their critics. However, the main focus of such criticism, namely the decontextualization of individual linguistic units, is of questionable relevance in relation to the C-test, since the C-test task is contextualized in real language use, real text. Moreover, although it may appear that the

C-test demands the deployment of skills remote from ordinary communication, in fact, C-test results have been found to correlate well with results from tests based on tasks which set out expressly to simulate everyday communication (see, e.g., Wright 1990).

It is true that some researchers (e.g., Cohen, Segal & Weiss Bar-Simon-Tov 1984) have noted a test-form effect with the C-test, that is to say a tendency for some subjects to concentrate on the local environment of the slot being filled, the formal particularities of the part of the word left standing, and to fail to take account of semantico-pragmatic context. However, our data from the piloting of the C-test in our project did not show significant signs of this effect; the vast majority of our subjects' responses were clearly semantico-pragmatically motivated. One reason for this - suggested by Grotjahn (personal communication) - may be that our C-test texts were somewhat longer than the 60/70-word texts that have customarily been used and thus provided a larger measure of semantico-pragmatic information and a better basis for the activation of natural-like processing. It is this possibility that has encouraged us to use texts for the next phase of the project which run to approximately 150 words. Also, to ensure equality of contextualization across texts we have in each case mutilated 50 words counting backwards from the end of the text. This means that the amount of unmutilated lead-in text is roughly equal in every case, which is, of course, not true if the lead-in is a grammatical unit of arbitrary length (the opening sentence). To further encourage semantico-pragmatic processing, we are in addition seeing to it that every text comes equipped with a title. Our intention is to develop a battery of at least four such tests for each language, varying the semantico-pragmatic and syntactic complexity so as to be able to monitor the effects of different levels of task difficulty.

It is envisaged that other types of language elicitation instruments will be used during the course of the current year. One of our doctoral students who has just completed a master's level

research project using word-association tests is currently devising a set of word-association testing instruments for use within the Modern Languages Research Project. Also in process of elaboration is a set of instruments (including, for example, picture description tasks) designed to elicit quasi-spontaneous oral L_2 performance. How many instruments are in the end deployed will depend on our capacity to deal with the data that they will yield, which in turn will depend on the efficiency of our data-processing system and the number of researchers we can attract to or employ on the project.

Finally in relation to data elicitation instruments, a word about how we intend to elicit introspective data: because of our limited resources, our requirement in this connection is for instruments which can be quickly and easily administered and which generate data that do not require much postcoding before being entered in the computer data-base. Designing an instrument for eliciting introspective data on subjects' C-test responses which meets these criteria is relatively unproblematic. We intend to use a refined version of a technique we employed in an earlier, small-scale experiment (Singleton & Little 1984), in which we asked subjects to comment on specified aspects of their performance on the experimental task immediately after completing the task, but without having forewarned them that they would be asked to provide such commentary. The instrument we shall utilize begins by posing a general question about the degree of difficulty of a given C-test. It then lists the mutilated words contained in the test and asks subjects to look back at their test paper and, ignoring their non-responses, to indicate (with a "P") those items which caused particular problems for them, and to provide some indication of how they went about solving these problems. Our assumption is that awareness of problematicity will tend to be associated with awareness of coping strategies, and that the data we obtain in the above manner will provide us with some real insights into at least the more conscious aspects of language processing. The administration of this instrument will be relatively simple, and the

data it yields will be limited enough in range to be computerizable without necessitating a huge amount of intermediate manual processing. Whether the elaboration of introspective instruments for use with other kinds of language elicitation procedures will prove quite so straightforward remains to be seen.

I turn now to the scope and practicalities of data collection. We began by envisaging the inclusion of all undergraduate students of French, German, Italian and Spanish in the process of collecting all of the above-mentioned types of data. However, it rapidly became clear during the pilot phase of the project that this would be impossible. The difficulties arose mainly in connection with the elicitation of samples of subjects' L_2 performance. In order to ensure that such elicitation took in the whole sample, it was necessary to schedule elicitation sessions during - that is, at the beginning or end of - obligatory classes in the languages in question. This put extremely tight constraints on what could be attempted, since we were operating, quite literally, on borrowed time. Another problem we encountered was that the fact that a class was in principle obligatory did not guarantee 100% attendance; far from it! Accordingly, the longitudinal dimension of the project began to look very shaky, since every time we tried to elicit L_2 data from a given language group it turned out to be differently composed. The clinching point in our decision to abandon our earlier plan, however, was that it was rapidly borne in on us that our limited human resources were simply not adequate to the task of analysing the huge and varied mass of data that would result from "blanket" elicitation of actual language data. The elicitation of introspective data from the entire sample of students of French, German, Spanish and Italian would undoubtedly also yield more highly individual data than we could cope with.

With regard to the elicitation of background information, although the distribution and collection of our questionnaire was not entirely unproblematic, we found we could achieve a very high rate of response by introducing and distributing the instrument during one of the classes in our Introduction to Language Study

course - which is taken by all first-year undergraduate foreign language students - and collecting up completed questionnaires during subsequent classes. As for university language examination results, we shall be asking participating departments to return these to us routinely year by year for all their undergraduate students, and do not foresee either complications or huge demands on our time resulting from this process.

In the light of our experience over the past two years, we have decided to organize the continuation of the project on two levels. At the first, more general, level, education and language background information will continue to be elicited from all first-year undergraduate students of French, German, Italian and Spanish, and the university language examination results of all of these subjects will continue to be monitored as they proceed through their degree course. It seems to us that some very broad correlations may be possible on the basis of these two sets of data which may bear on issues in second language acquisition research and which may also be of interest to the participating departments for more immediate practical purposes. At the second level, L_2 data and introspective data will be elicited from a small subsample of students, whose progress will be followed much more closely, and whose ongoing co-operation will be encouraged by the payment to them of a small sum of money each time they take part in an elicitation session. Because of the particular foreign language expertise of the researchers who will be involved at this second level of the project, only students of French and German will be recruited to participate at this level.

I want to conclude this description of the current state of the project with a brief word about computerization. The database which has been established to store the project data was custom-designed using ORACLE (Version 5.0), a relational database which uses a fourth-generation progamming language called SQL. This package offers particular advantages in the context of a project involving personnel with limited computer skills. The ORACLE forms through which the data are entered on-screen

are extremely user-friendly, allowing responses to be keyed in in verbal form, thus obviating the need for numerical coding. Obviously, under such circumstances the process of computerizing data is a very great deal less tedious and error-prone than where responses have to be converted to figures and where keyboard operators then have to cope with long strings of digits. We shall use SQL*CALC, the spreadsheet component of ORACLE, for tabulations and calculations.

3 SOME PRELIMINARY FINDINGS

Before reviewing some of the findings that have so far emerged from the project, I should emphasize that the analyses from which these findings emerge are of relatively small sets of manually processed pilot data. The analyses in question therefore represent no more than very small-scale explorations of the exciting possibilities which our data-bank will offer in its fully computerized - and multifariously manipulable - version.

I shall organize my treatment of our preliminary findings around the issues mentioned earlier - that is, the relationship between specific aspects of L_2 experience and levels of L_2 proficiency, the L_2 mental lexicon, and the interaction between languages learned and between language learning experiences. Constraints of space will permit no more than a very summary account of the relevant studies. For further details the reader is referred to the original papers, some of which will be available in published form in the near future.

L_2 experience and L_2 proficiency

The study which in the context of our project has to date done most to explore the relationship between specific types of L_2 experience and L_2 proficiency is that of Lenehan (1990). The particular aspect of L_2 experience that he looked at was simply the amount of contact with the L_2 outside the classroom. Common

sense suggests that the more of this kind of exposure the learner receives the higher his/her level of L_2 proficiency is likely to be. This common-sense intuition is borne out by a fair amount of empirical evidence too. To cite just one fairly widely known Irish study, Harris (1984) found that primary school level learners of Irish as an L_2 who experienced some home use of the language tended to perform significantly better on a range of tests of oral proficiency - including accuracy tests - than learners who had no exposure to Irish in the home. However, other studies - some of those reviewed by Long (1983), for example, - seem to suggest that, given a constant amount of instruction, increased exposure to the L_2 outside the classroom does not lead to with greater L_2 proficiency

What Lenehan did was to look very closely at the background information elicited by the project questionnaire from four high-scorers and four low-scorers on each of the two French C-tests that were administered in 1988-89. He first noted a broad correlation between the relative C-test performance of the two groups and the grades they had obtained in French in the Leaving Certificate (Irish school-leaving examination). More interestingly, he found a variety of indications in the questionnaire data that the high-scorers had had markedly more contact with French than the low-scorers - not only in terms of interaction with native speakers of the language but also in terms of private reading of French-language publications. Obviously, with such a small sample, one cannot generalize from these results, but they do demonstrate the kind of correlation that can be looked for between the different strands of our data-bank. Thanks to ORACLE, we shall soon be in a position to make such cross-tabulations on very much larger numbers of subjects by means of a few keystrokes.

The L_2 mental lexicon

A number of studies based on project data have been concerned with the L_2 mental lexicon. Little & Singleton (1990)

explored the suitability of the C-test for eliciting data that would be informative about L_2 lexical processing, while Singleton & Singleton (1989) and Singleton & Little (forthcoming) investigated the particularities of C-test responses with a view to drawing some inferences about the nature of such processing. Lenehan (1990), in addition to making connections between learners' language learning experience and their performance in public examinations and on C-tests, also looked at C-test responses in the perspective of the mental lexicon.

Little & Singleton (1990) gave very detailed attention to those of the pilot French and German C-test items that had posed particular problems for our subjects and showed that the range of responses to such items was particularly rich and suggestive in the context of an investigation of L_2 processing. A number of conclusions were also reached in this study about how the C-test procedure might be improved for the purposes of the project. Notably, the authors concluded

(i) that C-test-type instruments of varying semantic and syntactic complexity should be elaborated in order to facilitate the monitoring of the relationship between degrees of task difficulty and processing approach;

(ii) that an effort should be made to elicit introspective data about subjects' C-test performance so that there should be available to project researchers some way of checking speculations about subjects' strategizing in response to problematicity (cf. Grotjahn 1987, Feldmann & Stemmer 1987);

(iii) that the C-test data should be computerized in order to allow the possibility of more extensively cross-referenced analyses of these data;

(iv) that the C-test elicitations should be complemented with the elicitation of oral data, so that the relationship between C-test performance and oral performance could be explored.

As will be clear from discussion in the earlier part of the paper,

all of these points have been taken into account and acted on in the further development of the project.

With regard to the remaining project-based studies with a lexical processing orientation, they all addressed aspects of the debate concerning the nature of the L_2 mental lexicon vis-à-vis that of the L_1 mental lexicon. The received wisdom in some psycholinguistic quarters (see, e.g., Fromkin 1971, Soudek 1982, Hatch 1983, Meara 1984, Laufer 1989) seems to be that the L_2 mental lexicon is qualitatively different from the L_1 mental lexicon - that the former's networks, unlike the latter's, are "primarily phonological" rather than semantic (Laufer 1989: 17) and that the L_2 mental lexicon is more "loosely organized" (Meara 1984: 234) than the L_1 mental lexicon. The strong implication of such a view is, of course, that the L_2 mental lexicon is entirely separate from the L_1 mental lexicon. The results of the analyses of C-test data carried out by Singleton & Singleton (1989), Singleton & Little (forthcoming) and Lenehan (1990) run against this position.

All three studies found plenty of evidence of cross-linguistic influence at work in subjects' responses. This was most dramatically evident in cross-linguistic blends of the type **transcribé* (French *transcrire*, English *transcribe*), **fanacism* (French *fanatisme*, English *fanaticism*), **permité* (French *permettre*, English *permit*). Clearly such blends, as Aitchison (1987: 206) says, constitute a strong argument for the interconnection of L_1 and L_2 lexical processing.

Another aspect of such formations is that they are "creative", in the particular sense of going beyond the range of items that the native speaker would recognize as the vocabulary of his/her language. A substantial proportion of responses to the C-tests was found to be comprised of such "creations", some, like the examples cited, evidencing cross-linguistic influence, others not. The presence of such "creations" looks at first sight like evidence that Meara was right about the looseness and randomness of the L_2 lexicon. However, the three above-mentioned studies all showed that such creativity was simply a function of ignorance - as gauged

by global scores and item difficulty -, and could therefore readily be compared to L_1 lexical creativity in the face of lexical gaps and insecurities.

A further finding of Singleton & Little (forthcoming) has already been referred to in the earlier discussion of the merits or otherwise of C-tests - namely the predominance of semantico-pragmatically motivated responses to the pilot C-tests. A strong indication that a C-test response is semantico-pragmatically motivated is that it is actually correct, that is, appropriate to context and well-formed. Self-evidently, if a response meets the appropriacy criterion, it is very unlikely to have been arrived at without the meaning of the stimulus having been taken into account. Since a substantial proportion of responses - a majority in most cases - were actually correct, it was possible for Singleton & Little, on this basis alone, to point to the operation of a strong semantico-pragmatic factor. However, the story did not end there. It turned out that the vast majority of *incorrect* responses were also relatable to some semantico-pragmatic aspect of the stimulus. Most incorrect responses were in fact simply formally deviant versions of items in the original texts or acceptable substitutes - thus indicating the operation of the influence of contextual meaning in lexical choice in a manner not significantly different from the way in which it operates in the L_1 domain. Such evidence is obviously inconsistent with the claim that the L_2 mental lexicon is of its nature predominantly phonology-driven.

The interaction between languages learned and betweeen language learning experiences

Two studies associated with the project investigated the effects - beyond the lexical sphere - of accumulating languages. One study (Scarpa 1990) looked at the capacity of contrastive analysis to predict problems in L_2 morphosyntax and therefore the degree of cross-linguistic influence at the morphosyntactic level, while the other (Uí Mhaolaí 1989) concerned itself in a rather general way

with the phenomenon of early bilingualism.

Scarpa's sample was the group of 25 first-year undergraduate "*ab initio*" students of Italian who took the two Italian C-tests administered in 1988-89, and her objective, as has already been indicated, was to determine the predictive power of a contrastive analysis between Italian and English in respect of morphosyntactic errors made by subjects in completing these tests. Estimations of the importance of the contrastive dimension of problematicity in L_2 acquisition and use have, of course, varied enormously over the past few decades (see, e.g., Singleton 1987), and one cannot yet claim that there is a consensus view on the matter beyond a general acceptance that cross-linguistic influence is a factor. Scarpa's contrastive analysis was confined to those elements of morphosyntax that occurred in the two C-test texts, and on the basis of her analysis she forecast roughly how many morphosyntactic errors (0-3, 4-9 or 10+) each C-test slot would elicit over her whole sample. Allowing for a margin of error of plus or minus one, Scarpa's predictions proved accurate in 50% of instances in relation to the first Italian C-test and in 56% of instances in relation to the second. This looks like evidence that the old contrastive analysis hypothesis was not entirely off-beam, suggesting as it does that, at least in the early stages of learning, cross-linguistic effects can be very widespread.

We come finally to Uí Mhaolaí's (1989) study. Uí Mhaolaí located five subjects in the 1988-89 sample who had acquired two languages in early childhood. Four of these subjects were Irish-English bilinguals and one was a German-English bilingual. Uí Mhaolaí examined the educational careers of these subjects, as revealed by the project questionnaire data, and in addition administered a follow-up questionnaire of her own devising which sought further details about language learning experience, attitudes towards language learning, and language learning strategies. The issue she wished to address was the question of whether bilingualism has negative effects on general development - as suggested by studies like those of Tireman (1955) and Macnamara

(1966) - or on the contrary positive effects - as suggested by studies such as those of Peal & Lambert (1962) and Carringer (1974). What she in fact found was that the bilinguals she studied had performed above rather than below the average level attained by the monolinguals in their year as far as school examinations were concerned, that they seemed to have a high level of metalinguistic awareness, and that they seemed to have an integrative orientation towards their target languages. As in the case of Lenehan's (1990) study, the sample here is too small to provide much scope for generalization, but, again as in the case of the Lenehan study, Uí Mhaolaí's work does show the possibilities for exploring important second language research issues that are made available by the project data-bank.

4 CONCLUDING REMARKS

What I have tried to do in this paper is to give some impression of where the TCD Modern Languages Research Project has come from and where we think it is going. I have set out its objectives, described its past, present and future instruments and methods, indicated how it is being computerized, and summarized the findings of some small-scale studies in which it has already borne fruit. The next two or three years will be particularly exciting ones for the project, as the lessons learned from the pilot phase are put into effect and as computerization begins to yield its benefits. We are confident that before this decade is half over the project will have some important contributions to add to the second language research pool.

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